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ABSTRACT

The extent to which college-related changes in personality functioning persisted between college graduation and 10 years later was studied, and developmental patterns common to 18- and 32-year-old college-educated persons were identified. The relationship between various demographic characteristics linked either empirically or theoretically to personality development in the young adult years was also addressed. An Alumni Questionnaire (AQ) and the Omnibus Personality Inventory (OPI) were administered to a sample of 1970 graduates of Luther College. The 200 respondents had completed the OPI prior to the freshman year and in the senior year. The findings seemed to indicate that many of the changes in personality functioning associated with college tend to backslide 10 years after graduation, and that the developmental patterns of young adults differ appreciably. The results indicate that not all of the respondents evidenced increases of those dimensions on which development is expected to occur during college (e.g., aestheticism, integrative maturity). The degree to which college-related changes in personality functioning are maintained seem to be related to the post-college environment. Respondents who were working in the professions were less likely to backslide following graduation. The differences among respondents' patterns of personality functioning during and after college were not easily explained by biographical variables. The results support the premise that development occurs in various dimensions at differential rates over the life span. (SW)

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Influence of College Related Changes in  
Personal Life Functioning Ten Years After Graduation

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## Persistence of College Related Changes in Personality Functioning Ten Years After Graduation

It is generally recognized that undergraduate colleges purport to facilitate students development along three distinct but interrelated dimensions: (1) cognitive learning or the acquisition and critical appraisal of knowledge; (2) affective maturity or the differentiation and integration of moral, religious, and emotional interests; and (3) practical competence or satisfactory performance in citizenship, vocation, family life, and other practical affairs (Bowen, 1977). The relative emphasis given to any one of these three purposes has tended to fluctuate over time. In recent years, for example, additional importance has been placed on a specific component of practical competence, vocational training.

The tendency to emphasize "benefits of college" that can be described in economic terms is not surprising in light of spiraling college costs, an economic malaise, and drawdowns in federal and state aid to higher education. Nevertheless, many have argued that the enduring value of the college experience is more importantly manifested by desirable changes in students' personality functioning and behavior patterns (e.g., Freedman, 1962; Heath, 1976; Sanford, 1967) that, to the extent to which they persist beyond college, may be associated with positive, qualitative changes in society (Clark, Heist, McConnell, Trow, & Yonge, 1972).

Indeed, college attendance has been linked to a number of shifts in personality functioning deemed desirable by most educators. On the

average, college students have tended to become more liberal and sophisticated in their political, social, and religious views, and evidence more complex and autonomous thought processes (Ellison & Simon, 1973; Trent & Medsker, 1968). Most of these changes in personality functioning have been found to persist at least within the five year period immediately following graduation (Feldman & Newcomb, 1968).

Limiting the study of the impact of college to the years immediately following graduation does not address the issue of long term stability of college related changes in personality functioning. Which of the changes that take place during college and the years following graduation are transient in nature and which become relatively enduring parts of a college educated person's character or personality?

It has been demonstrated that development during the adult years can be expected along a variety of social and emotional dimensions (e.g., Levinson, 1978; Weathersby, 1976). Does the decade after college graduation constitute a unique period of development similar to those described by other researchers? Does cognitive development occur during this time? If development along some personality dimensions does continue during this period, what factors in respondents' environments are related to various shifts in personality functioning?

Most of the few extant longitudinal studies focusing on persistence of college related changes have been conducted with students from prestigious Eastern single-sex colleges and have reported findings that

emphasize social and emotional rather than intellectual component personality functioning (Freedman, 1962; Heath, 1976, 1977; Newcomb, 1943; Newcomb, Koenig, Flachs & Warwick, 1967). The findings from these studies are interesting and important; however, their generalizability is limited due to the relatively short period--often less than five years after graduation (Heath and Newcomb et al. are exceptions)--covered by the studies, and the types of institutions--selective Eastern single sex colleges--from which the samples were drawn. Until now, the personality functioning of a coed sample college graduates over a ten year period has not been monitored.

### Purpose

The purposes of this study are threefold:

1. to determine the extent to which college related changes in personality functioning persisted between college graduation and ten years later;
2. to identify "developmental patterns" common to 18-32 year old college educated persons;
3. to determine the relationship between various demographic characteristics linked either empirically or theoretically to personality development in the young adult years.

Personality was defined as selected dimensions of normal ego functioning and intellectual activity comprised attitudes, values, and interests thought to be relevant to academic activities. Theoretical bases of interest are those which encompass "the developmental nature of man and the social contexts in which current behavior occurs and growth and development take place" (Heist & Yonge, 1968, p. 2). Young adults are

considered to be capable of exhibiting changes in personality functioning and the type, direction, and degree of change contingent upon individual experience and current challenges.

### Method

#### Instrumentation

The following instruments were used to collect the required information. The Longitudinal Personality Inventory (OPI) measures intellectualism and social-moral adjustment by recording differences in attitudes, opinions, and feelings on a variety of subjects thought to be relevant to adult activities. Each of the 385 items contributing to the OPI belongs to one or more of 14 scales: thinking introversion (TI--a liking for reflective thought); theoretical orientation (TO--preference for theoretical concepts and the scientific method); estheticism (Es--interest in esthetic matters); complexity (Co--tolerance of ambiguity); autonomy (Au--nonauthoritarianism); religious orientation (RO--religious liberalism); social extroversion (SE--preference for relating to others); impulse expression (IE--readiness to seek gratification); personal integration (PI--degree of emotional adequacy); anxiety level (AL--nervousness, tension, and social adjustment); altruism (Am--degree of affiliation); practical outlook (PO--interest in applied activities and material possessions); masculinity-femininity (MF--differences in attitudes between men and women); response bias (RE--respondent's test-taking attitude).

The OPI validation data reflect many statistically significant correlations with other instruments that assess attitudes and interests.

Because the OPI is designed specifically "to provide a meaningful differentiating description of students and a means of assessing persons' 'change'" (West & Yonge, 1968, p.3), it seemed logical that an effort to determine the persistence of the impact of college on various personality dimensions employ an instrument specifically designed to assess change along those dimensions.

The second instrument, the Alumni Questionnaire (AQ) was developed to elicit demographic information about respondents' significant accomplishments since graduation, satisfaction with the baccalaureate experience and with level of educational attainment, and personal as well as spouse's political affiliation, community attitudes, income, and occupation. The AQ is a revised version of an instrument used in 1975 with the same group of alumni. Therefore, respondents were familiar with the kinds of questions raised in the AQ.

### Subjects

The institution from which the sample is drawn, Luther College (IA), is noteworthy when compared with the other institutions from which alumni studied by other investigators have graduated. Having selected a denominational liberal arts college, Luther students during the 1960s were probably more conservative than the Bennington (Newcomb et al., 1967) and Vassar (Freedman, 1962) students of the 1930s and the 1950s given the prevailing societal attitudes of the respective decades. When compared with their counterparts in postsecondary education during the 1960s, Luther students' attitudes were more moderate. Compared with Bennington, Haverford, or Vassar graduates of the same era, the academic ability (as evidenced by high school rank and Scholastic Aptitude Test)

of the Luther sample may be more representative of the typical 1970 college graduate (Kuh, 1976).

The group to be studied included all living 1970 graduates of Luther College (IA) who had completed the OPI prior to the freshman year and in the spring of the senior year (n=87 males, 112 females). It has been empirically determined that the personality functioning of this group was not significantly different than their counterparts who completed the OPI as freshmen but not as seniors (n=61 males, 32 females). As undergraduates, the target sample exhibited changes in attitudes and values consistent with the findings of other college impact studies (i.e., increased intellectual orientation, estheticism, autonomy, religious liberalism, impulse expression; decreased importance of material possessions and anxiety) (see Kuh, 1976).

### Procedures

Data Collection. Current addresses for members of the Class of 1970 were obtained from the Alumni Affairs Office. In December 1979, several weeks before the data collection was to begin, the subjects were informed of the study through an announcement in a regular alumni newsletter. In February 1980, a packet of materials including the OPI, OPI Answer Sheet, the AQ, letters from both the President of the College and the investigator explaining the importance and purpose of the study, and a stamped return envelope were sent to the 200 living alumni who had participated in this project as freshmen (1966) and seniors (1970).

About four weeks after the initial mailing, another packet of materials was sent to subjects who had not responded. In late March, telephone calls were made to approximately 25 subjects for whom

telephone numbers could be found to encourage their participation. At this time 11 subjects refused to participate and the whereabouts of four more alumni could not be determined. In addition, it could not be determined whether three of the four alumni living abroad received the materials. By June 1, 1980, usable information was returned by 70 males and 96 females for a response rate of 83% (79% male; 86% female). Included in this group were 64 men and 88 women who had also completed the OPI and an earlier version of the AQ in 1975 (see Kuh, 1976, 1977) and who comprise the respondent group of interest in this study.

Data Analysis. To provide a framework within which alumni personality functioning could be considered, a profile of alumni demographic characteristics was compiled from responses to the AQ. Mean scores and standard deviations for the 14 OPI scales were computed to estimate group changes over the 14 year period.

In many studies using the OPI, the scales are interpreted as orthogonal. A principal components analysis without rotation (PA II Type Factor) of responses to the OPI within each of the four administrations (1966, 70, 75, 80) produced the most satisfactory solution and resulted in four factors that accounted for about 75% of the variance in OPI responses (see Table 1).

The first factor is comprised of four OPI scales (Personal Integration, Altruism, Anxiety Level, and Social Extroversion),\* and accounted for about 41 percent of the four factor solution variance. This factor was labeled

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\*The Response Bias scale also loaded on this factor. It has been suggested that because persons tend to feel more confident and secure as they grow older, this scale does not discriminate between persons who actually feel better about themselves and those who respond in what they consider to be socially desirable ways (see Freedman, 1962).

Integrated Maturity to reflect personal well-being and the degree to which respondents are "other-oriented." The two scales (Estheticism and Masculinity-Femininity) loading on the second factor, Aestheticism, accounted for about 31% of the variance. Five GPI scales (Complexity, Autonomy, Religious Orientation, Impulse Expression, and Practical Outlook-negative load) comprise the third factor which accounted for an additional 19% of the variance. This factor was labeled Nonauthoritarianism as the positive responses to items loading on this factor reflect free, unrestrained thinking combined with a tolerance for and openness to new ways of behaving. The fourth factor, Intellectualism, accounted for the remaining 9% of the variance and is comprised by the Thinking Introversion and Theoretical Orientation scales. The inter-correlations in Table 1 suggest independence of factors.

To identify developmental patterns common to young alumni, respondent factor scores from the four periods were submitted to a hierarchical agglomerative clustering solution (Veldman, 1967). This procedure forms respondent groups with similar developmental patterns by reducing within group and maximizing between group variance in respondents' scores on the four factors. A five group solution produced the best "fit" for two factors, Integrated Maturity and Aestheticism. The remaining two factors required a six group solution to minimize the within factor between groups error estimate. To further reduce the discrepancy between respondent scores and the average pattern scores of the group to which respondents were assigned, several alumni with atypical patterns were removed from the developmental

pattern groupings on three factors: Integrated Maturity (n=5); Nonauthoritarianism (n=2); Intellectualism (n=2).

Each of the groups created for each factor by the clustering procedure was crosstabulated with selected respondent demographic variables to determine whether relationships existed between various developmental patterns and respondents' experiences and activities since graduation. The following variables have been either theoretically or empirically linked to personality development (Heath, 1977; Kuh, 1977; Newcomb et al, 1967; Sanford, 1962) and were included in the crosstabulations: occupation, marital status, age when first married, income, educational attainment, spouse's occupation, number of children, attendance at religious and cultural events, participation in community and social organizations, satisfaction with marriage, and satisfaction with life in general.

### Results

Two thirds of the respondents were 31 years old, the others were 32. Only 14% of the respondent group had never married. Of those that were married: over 80% remained married to their first spouse; 82% married within the first three years following graduation; 48% married someone who had attended the same institution; 93% reported being satisfied or highly satisfied with the quality of their marriage; 67% had children. The majority (46%) described themselves as politically independent, with the remainder divided between Democratic (18%) and Republican (34%) parties.

Eighty-five percent attended religious services at least once a month and over two-thirds of the respondents attended services two or more times per month. Cultural events were attended by over half (58%) of the respondents at least once a month and 65% reported being active in at least one social or civic organization with all but two volunteering an average of eight hours per month to some organization. Three quarters owned or held the mortgage on their own home. Three quarters of the respondents reported being satisfied with their undergraduate major and a comparable portion said they would attend the same undergraduate institution if they had it to do over.

Over 90% reported being satisfied with their current occupation. Over 40% of the women indicated that "homemaker" was their full time occupation. Fourteen percent of the respondents were involved in teaching or educational administration and over 20% were in some business-related position. Among the remaining respondents were: five medical doctors, one dentist, four lawyers, five clergypersons, and two farmers. The respondents' average income was about \$14,200.

#### Group Mean Scores

In general, some backsliding was exhibited between graduation and ten years later on many of the OPI scales. A notable exception was the Personal Integration measure which reflected a substantial increase (Table 2). Anxiety Level (reversed scored in that a high AL score indicates relative freedom from nervousness) also showed a modest increase as did Practical Outlook. Slight decreases were exhibited

on most of the remaining scales. The directions of changes over the 14 year period were similar for both men and women; the latter group tended to evidence slightly larger decreases between college and 10 years later on TI, Es, Co, and RO.

### Developmental Patterns

For all the factors but one (Nonauthoritarianism), the clustering solution resulted in essentially three types of developmental patterns: Ascending, Maintenance, and Descending. Several variations of each were noted: High Ascenders--persons who entered college with a relatively high score on the respective factor and continued to evidence increases; Low Ascenders--persons who began college with relatively depressed factor scores but have continued to increase over 14 years; High Descenders--persons who had high factor scores at college entrance but evidenced systematic decreases over time; Low Descenders--persons who began college with relatively low factor scores and exhibited decreases; Maintainers--persons whose factor scores did not deviate appreciably between the time they entered college and 14 years later.

For the Integrated Maturity factor (Figure 1), three interesting patterns emerged: Low Maintainers (Group 5), Low Ascenders (Group 2), and High Ascenders (Group 1). The Low Maintainers on this factor consistently exhibited a depressed self image and little interest in associating with others while the Low Ascenders increased from a relatively depressed to a high average level in their feelings of

personal well being and interest in others. High Ascenders also increased in their liking for self and others. Note that, on the average, respondents' scores decreased on the SE scale of the OPI and increased on the other three scales that comprised this factor (PI, AL, Am,--Table 2).

In general, the Aestheticism dimension was comprised of relatively flat patterns with one exception (Figure 2). A small group of alumni (n=6) labeled Ascenders evidenced a marked increase in their interest in esthetic matters. The Low Maintainers (Group 4) appeared relatively untouched through the college years and evidenced a slight decrease during the years following graduation. This is particularly interesting given that the regression toward the mean phenomenon was successfully resisted by this group of respondents characterized by little or no appreciation for artistic qualities.

Diverse developmental patterns resulted from respondents' Intellectualism factor scores (Figure 3). Seventeen persons maintained the relatively high interest in reflective thought evidenced as freshmen. Another group, Average Descenders (Group 6), exhibited a substantial decrease in this type of mental activity, particularly following graduation. Initially, the Low Ascenders (Group 5) were relatively uninterested in ideas but evidenced systematic if not substantial gains over time on this dimension. Similarly, the Low Maintainers (Group 2), did not report a preference for intellectual matters when they began college and actually showed a slight decrease during and after college in their liking for logical and reflective thought processes.

All six Nonauthoritarianism developmental patterns were similar in direction--during college increases followed by post-college decreases--but not magnitude (Figure 4). The gains associated with the college years for three groups, Low Gain-Great Loss (Group 6), Average Gain-Great Loss I (Group 5), and Average Gain-Great Loss II (Group 1) were negated by post-college declines. The High Gain-Maintain pattern (Group 2) showed a substantial increase during college that tended to persist following graduation. It should be noted that the substantial decreases reflected in the Nonauthoritarianism factor pattern are due in large part to the post-college drops on the Complexity scale of the OPI, particularly for women (see Table 2).

In an attempt to discern relationships between the developmental patterns, factor scores for each developmental pattern group were converted to t scores. A visual comparison suggested that, in general, those persons who had high scores on one factor tended to have high scores on the other factors. The data presented in Table 3 reflect the relative strength of the relationship between respondents' developmental patterns and their respective 1980 factor scores.

#### Relationships Between Developmental Patterns and Selected Respondent Biographical Variables

Respondents who were older when they were first married were over represented among Low Maintainers for both the Integrated Maturity and Intellectualism patterns. The number of respondents' children did not appear to be related in any systematic way with different developmental patterns.

Several interesting relationships (nontabled) were discovered between respondents' undergraduate grade point average (reported by respondents in 1975, five years after graduation) and their developmental patterns. The small group of Aesthetic Ascenders had a lower grade point average (2.70) than respondents in general (3.03), ( $sd=.6$ ). The highest grade point average (3.22) for any Intellectualism pattern was reported by the High Average Maintainers. Average Descenders' grade point average (3.06) also exceeded the group mean (3.01).

Of the 55 respondents who have completed an advanced degree, 30% ( $n=16$ ) had Intellectualism High Average Maintainer patterns. Another 23% ( $n=12$ ) of those with advanced degrees were from the High Ascender group. Eighty percent of those who had completed doctors degrees including medicine, dentistry, and law evidenced one of these two patterns.

#### Participation in Social, Cultural, and Community Activities

Persons with the Low Maintainer pattern on Integrative Maturity and with the High Gain-Backslide pattern on Nonauthoritarianism were less likely to attend religious services than their counterparts with other developmental patterns. Those most likely to attend religious services came from the Low Gain-Great Loss Nonauthoritarianism pattern. The Low Maintainers on the Integrated Maturity measure were least likely to attend cultural events. Persons in the High Gain-Maintain Nonauthoritarianism group were most likely to attend such events.

Respondents who reported little or no involvement in community activities reflected the flat, Low Maintainer profiles on the Integrated Maturity and Aestheticism measures and the Average Descender profile on Intellectualism (6.1, 4.8, 6.0) compared with the amount of volunteer time their counterparts contributed (7.5 hours per month).

#### Income

Personal income was related to both the Nonauthoritarianism and Intellectualism patterns. Those persons who evidenced the Nonauthoritarianism Low Gain-Great Loss and the Intellectualism Low Maintainer profiles tended to make substantially less money (\$10,800 and \$8,900 respectively) than their counterparts. The High Gain-Maintainers on Nonauthoritarianism and the Average Descenders on Intellectualism made substantially more money (\$17,000) than the rest of the group. When respondents' income was combined with spouses' income, persons in the Aestheticism Ascender pattern reported substantially greater family earnings (\$39,000) than their counterparts (\$28,000). This was also true for the High Gain-Maintain Nonauthoritarianism pattern (\$38,700).

#### Occupation

As reported earlier, respondents' satisfaction with occupation tended to be quite high. Those who were least satisfied (.5 sd below the X) evidenced a Low Maintainer pattern on Integrated Maturity and an

Ascender pattern on Aestheticism. The members of the High Ascender Intellectualism group also reported less satisfaction with their current occupation.

The majority (78%) of persons who reported "homemaker" as their primary occupation (n=37 females) reflected High Ascender, Low Ascender, or High Maintainer patterns on the Integrated Maturity factor. Only one of the women had a Low Maintainer profile. However, three of the persons working in a traditional profession (medicine, dentistry, law) had the flat, Low Maintainer Integrated Maturity pattern.

A third of the homemakers were in the Low Gain-Great Loss group on Nonauthoritarianism; none of the professionals evidenced this developmental pattern.

On the Intellectualism measure, all but a couple of the professionals were in the High Ascender or High Average Maintainer groups. The remaining twosome was in the Average Descender category. However, 20 of the 37 homemakers were either found in the Low Maintainer or Average Descender groups.

Analyses of the relationships between developmental patterns and other biographical variables thought to be linked to personality functioning (e.g., marital status, satisfaction with marriage and with life in general) were inconclusive.

#### Discussion

Descriptions of adult personality functioning have tended to emphasize within group similarities during the respective periods

(e.g., Levinson, 1978; Sheehy, 1976). This is not surprising given that most investigations of this nature have relied on cross sectional designs. Therefore, researchers have been limited to questions that can be answered by the kinds of data collected: themes or tasks common to the respective age periods under study. In other words, researchers tend to "see" what they are looking for (i.e., behaviors linked to a "developmental schema"). In this study, a number of different patterns were found to characterize respondents' development over a 14 year period. From these data, two tentative conclusions seem warranted. First, many of the changes in personality functioning associated with college tend to backslide ten years after graduation. Second, the developmental patterns of young adults differ appreciably. Therefore, the chronologically age-linked tasks for young adults reported in the literature (e.g., Levinson, 1978; Sheehy, 1976) may inadequately describe and obscure the considerable diversity exhibited by this group of respondents.

Feldman and Newcomb (1968) have suggested that the post-college environment is important to supporting college related changes in personality functioning. They also warned, however, that some students remain relatively untouched by the liberalizing influence of the college experience. It is clear from the results of this study that not all of the respondents evidenced increases on those dimensions on which development is expected to occur during college (e.g., Aestheticism, Integrative Maturity). The findings from this study also suggest that persons who exhibited flat or descending patterns during college were also less likely to change during the ten years following

graduation. Perhaps development to socially desirable levels for some college educated persons is not a realistic expectation.

The degree to which college related changes in functioning are maintained seem to be related to the college environment. While it is true that women who worked exclusively in the home following graduation tended to exhibit relatively low developmental levels on both the Intellectualism and Nonauthoritarianism factors as first year college students, they did evidence considerable increases during college. These gains were wiped out in the ten years following graduation. Yet the great proportion of homemakers reported high levels of self esteem and satisfaction with their roles. Perhaps in the decade to come, some of these women will evidence increases on several related dimensions as they become increasingly less burdened by the responsibilities of child rearing and are challenged by growth enhancing environments outside the home.

The relationship of the environment to maintaining changes in personality functioning associated with college is best evidenced by the respondents working in the professions. While these persons evidenced fairly high developmental levels on most dimensions as first year college students, they were also less likely to backslide following graduation.

The differences among respondents' patterns of personality functioning during and after college are not easily explained by biographical variables. Chickering's (1968) observation, "Unto them that hath is given" (p. 85) seems to accurately describe the patterns

in personality functioning over the 14 year period covered by this study. Those students that started college with relatively high scores on these factors tended to increase and maintain these levels over time. This is particularly true of the Intellectualism and Nonauthoritarianism measures. In addition, because persons with high scores on one factor tended to have high scores on other factors lend support to the claim that the degree to which college has an influence on students is related to student characteristics at the time of college entrance.

While these conclusions appear warranted, it is important not to lose sight of the fact that for some students, college may be a developmentally powerful experience. The during college gains and post college maintenance for Aestheticism and Integrated Maturity are particularly impressive. Of course, whether similar gains would have been evidenced by a non-college educated cohort is not clear but others (e.g., Trent & Medsker, 1968) have suggested that, at the least, college has an accentuating influence. Nevertheless, there are some respondents such as the Integrated Maturity High Ascenders, Aestheticism Ascenders, and Intellectualism High Ascenders who have continued to increase on these measures following college. The systematic drops on Nonauthoritarianism for most persons reflect less autonomy and tolerance for ambiguity. These changes are not surprising given the daily demands of childrearing and the increasing responsibilities associated with establishing vocational identity and competence.

Stage or period theorists such as Levinson and Sheehy emphasize the central importance of psychological tasks to be mastered during the young adult years. While the importance of age linked challenges cannot be overlooked, the results of this study suggest that not all persons respond similarly to such tasks. As alluded to earlier, the kinds of questions that can be answered in an investigation of adult development are related to the design employed. Much of the adult development literature has focused on the activities or events with which adults must contend during various chronological periods.

Using a single perspective such as that provided by the OPI tends to result in a linear model of development. However, human development is probably more accurately described as recursive, a cyclical set of experiences that results in persons recreating their ways of knowing, feeling, and understanding to respond to challenges encountered during the life cycle. The four factors or dimensions distilled from the OPI scales do not exhaust the various domain issues (e.g., economic, moral, political, etc.) with which young adults must cope. The limitations associated with using a unitary template to depicting development are important to recognize. Certainly there are many possible ways of making sense of the changes in personality functioning during and after the college years. At the least, the results from this study lend empirical support to the premise that development occurs in various dimensions at differential rates over the life span.

References

Bowen, H. R. Investment in learning. San Francisco: Jossey-Bass, 1977.

Clark, B. R. et al. Students and colleges: Interaction and change. Berkeley: Center for Research and Development in Higher Education, University of California, 1972.

Ellison, A., & Simon, B. Does college make a person healthy and wise? In L. C. Solomon & P. J. Taubman (Eds.), Does college matter? New York: Academic, 1973.

Feldman, K. A., & Newcomb, T. M. The impact of college on students (Vol. 1). San Francisco: Jossey-Bass, 1969.

Freedman, M. B. Studies of college alumni. In N. Sanford (Ed.) The American College. New York: Wiley, 1962.

Gould, R. L. Transformations. New York: Simon & Schuster, 1978.

Heath, D. H. What the enduring effects of higher education tell us about a liberal education. Journal of Higher Education, 1976, 47, 173-190.

Heath, D. H. Academic predictors of adult maturity and competence. Journal of Higher Education, 1977, 48, 613-632.

Heist, P., & Yonge, G. Manual for the Omnibus Personality Inventory. New York: Psychological Corporation, 1968.

Kuh, G. D. Persistence of the impact of college on attitudes and values. Journal of College Student Personnel, 1976, 17, 116-122.

Kuh, G. D. Factors associated with postcollege changes in personality characteristics. Journal of College Student Personnel, 1977, 18, 362-370.

Levinson, D. J. The seasons of a man's life. New York: Knopf, 1978.

Newcomb, T. M. Personality and social change. New York: Dryden, 1943.

Newcomb, T. M., Koenig, K. E., Flachs, R., & Warwick, D. P. Persistence and change. New York: Wiley, 1967.

Sanford, N. Where colleges fail. San Francisco: Jossey-Bass, 1967.

Sheehy, G. Passages: Predictable crises of adult life. New York: E. P. Dutton, 1976.

Trent, J. W., & Medsker, L. L. Beyond high school: A psychological study of 10,000 high school graduates. San Francisco: Jossey-Bass, 1969.

Veldman, D. J. Fortran programming for the behavioral sciences. New York:  
Holt, Rinehart & Winston, 1967.

Weathersby, R. A synthesis of research and theory on adult development.  
Doctoral Qualifying Paper, Harvard University, 1976.

Table 1

## Factor Intercorrelations Between and Within Four Testing Periods

		<u>1966<sup>a</sup></u>		
<u>1970<sup>b</sup></u>		Integrated Maturity	Aestheticism	Nonauthoritarianism
IM	(.70) <sup>c</sup>		.08	-.03
AES	.07		(.74)	.17
NA	-.06		.14	(.64)
IT	.13		.15	.39
				(.58)
		<u>1970<sup>a</sup></u>		
<u>1975<sup>b</sup></u>		Integrated Maturity	Aestheticism	Nonauthoritarianism
IM	(.72) <sup>c</sup>		.10	-.19
AES	.09		(.80)	.17
NA	-.11		.13	(.81)
IT	.19		.20	.57
				(.73)
		<u>1975<sup>a</sup></u>		
<u>1980<sup>b</sup></u>		Integrated Maturity	Aestheticism	Nonauthoritarianism
IM	(.77) <sup>c</sup>		.03	-.18
AES	.02		(.85)	.18
NA	-.06		.27	(.84)
IT	.15		.24	.60
				(.83)

Note: <sup>a</sup> Correlations above diagonal reflect within year relationships

<sup>b</sup> Correlations below diagonal reflect within year relationships

<sup>c</sup> Correlations on diagonal reflect between year comparisons

Table 2

Means and Standard Deviations of QPI Scale Scores  
for Male and Female Respondents Over Time

<u>QPI</u> Scales	Sex	1966		1970		1975		1980	
		$\bar{X}$	sd	$\bar{X}$	sd	$\bar{X}$	sd	$\bar{X}$	sd
Thinking Introversion	M	22.6	8.3	24.7	8.0	25.3	7.9	24.9	8.3
	F	23.1	6.4	24.7	6.8	23.3	7.0	22.6	7.0
Theoretical Orientation	M	18.9	4.9	20.0	4.8	19.8	5.0	19.5	4.9
	F	15.9	5.3	16.9	5.3	15.7	5.7	15.1	5.6
Estheticism	M	9.3	4.8	11.6	5.5	11.4	5.3	11.0	5.6
	F	12.7	4.2	13.8	4.7	12.9	4.6	12.2	4.6
Complexity	M	13.7	4.4	16.8	5.8	14.2	5.5	13.0	5.7
	F	12.9	4.7	13.6	5.7	10.7	4.5	10.2	4.6
Autonomy	M	23.2	5.4	30.3	7.3	29.4	7.2	27.6	6.9
	F	20.6	5.4	29.4	6.2	27.4	6.3	27.5	5.8
Religious Orientation	M	8.6	3.8	12.8	5.0	12.5	5.1	11.1	5.1
	F	7.7	2.9	11.4	3.8	10.8	4.3	9.5	4.3
Social Extroversion	M	21.9	8.0	20.9	7.5	21.0	7.7	19.9	7.9
	F	23.8	7.3	22.9	6.9	21.7	6.8	21.2	6.6
Impulse Expression	M	26.9	9.5	34.0	10.8	26.4	9.1	23.8	9.2
	F	20.8	7.8	27.0	9.3	18.2	6.9	17.9	7.2
Personal Integration	M	30.7	10.5	33.5	12.9	39.0	10.4	39.8	10.2
	F	33.0	9.1	38.4	9.4	39.9	8.0	41.3	7.2
Anxiety Level	M	11.6	4.6	13.3	4.8	14.6	4.5	14.7	4.6
	F	12.6	3.1	14.3	4.0	14.6	4.0	14.8	3.3
Altruism	M	21.6	5.6	21.1	6.4	22.9	5.6	23.0	5.8
	F	24.8	3.9	25.3	4.0	25.6	4.0	25.4	4.4
Practical Outlook	M	15.7	5.1	12.0	6.6	12.2	6.4	13.2	6.4
	F	15.6	4.0	12.2	4.5	13.1	5.0	13.7	5.0
Masculinity- Femininity	M	31.9	6.2	30.1	5.4	30.1	5.2	30.8	5.4
	F	22.5	5.6	24.0	5.0	23.7	5.5	24.0	5.0
Response Bias	M	14.1	4.4	13.3	4.4	15.4	4.4	15.9	4.6
	F	14.3	4.3	13.3	4.2	14.7	3.8	15.4	3.9
N=		M	73		73		73		64
		F	97		97		97		88

Table 3  
Means and Standard Deviations of 1980 Factor Scores \*  
by Factor Developmental Patterns

Developmental Patterns	Integrated Maturity		Aestheticism		Nonauthoritarianism		Intellectualism		
	n	$\bar{X}$	sd	$\bar{X}$	sd	$\bar{X}$	sd	$\bar{X}$	sd
<u>Integrated Maturity</u>									
High Ascender	31	61.9	3.2	52.2	9.3	50.6	9.5	53.3	9.2
Low Ascender	27	51.8	4.4	44.9	10.2	46.8	9.9	47.6	10.3
Average Main.	25	43.5	6.1	53.3	11.4	50.2	9.2	47.1	9.3
High Main.	46	52.3	4.2	49.7	9.8	49.4	9.3	50.6	9.5
Low Main.	18	32.6	6.4	49.8	7.7	54.8	12.2	49.8	10.5
<u>Aestheticism</u>									
High Main.	42	53.1	8.1	60.5	4.9	52.9	10.1	52.5	10.6
Average Main.	33	50.3	9.2	47.4	4.3	48.9	9.6	50.0	10.0
High Descender	40	46.7	10.8	50.3	5.5	49.4	10.0	48.9	9.6
Low Main.	31	50.5	11.0	36.2	5.4	47.7	9.7	47.4	9.2
Ascenders	6	46.3	11.8	60.8	3.4	51.5	11.4	53.2	10.9
<u>Nonauthoritarianism</u>									
Gain-Loss II	43	53.2	8.4	49.2	10.5	48.2	3.7	48.2	8.2
High Gain-Main.	23	51.6	12.5	53.3	9.6	61.2	5.5	60.3	7.6
Low Gain-Back	21	51.1	7.4	48.4	9.7	46.5	4.3	45.4	6.6
High Gain-Back	11	45.5	12.4	52.4	11.4	65.6	7.0	57.6	8.2
Gain-Loss I	21	44.1	9.7	51.3	7.8	55.9	6.2	52.6	8.2
Low Gain-Loss	31	49.0	9.5	48.6	9.7	38.7	4.5	43.6	10.0
<u>Intellectualism</u>									
Low-Ave. Main.	34	47.9	9.8	50.7	10.5	50.1	8.3	49.6	4.8
Low Main.	22	48.8	8.3	47.1	10.6	42.9	6.6	36.5	3.7
High Ave. Main.	35	53.8	10.4	50.8	9.2	52.7	8.6	57.7	4.6
High Ascender	17	49.3	12.5	54.4	7.9	62.3	9.3	65.7	4.3
Low Ascender	22	51.4	6.5	47.2	11.1	48.0	10.4	48.6	5.6
Ave. Descender	20	49.2	10.1	51.0	9.6	44.4	6.7	41.0	3.8

\*Converted to t scores,  $\bar{X} = 50$ .

Figure 1  
Integrated Maturity Developmental Patterns

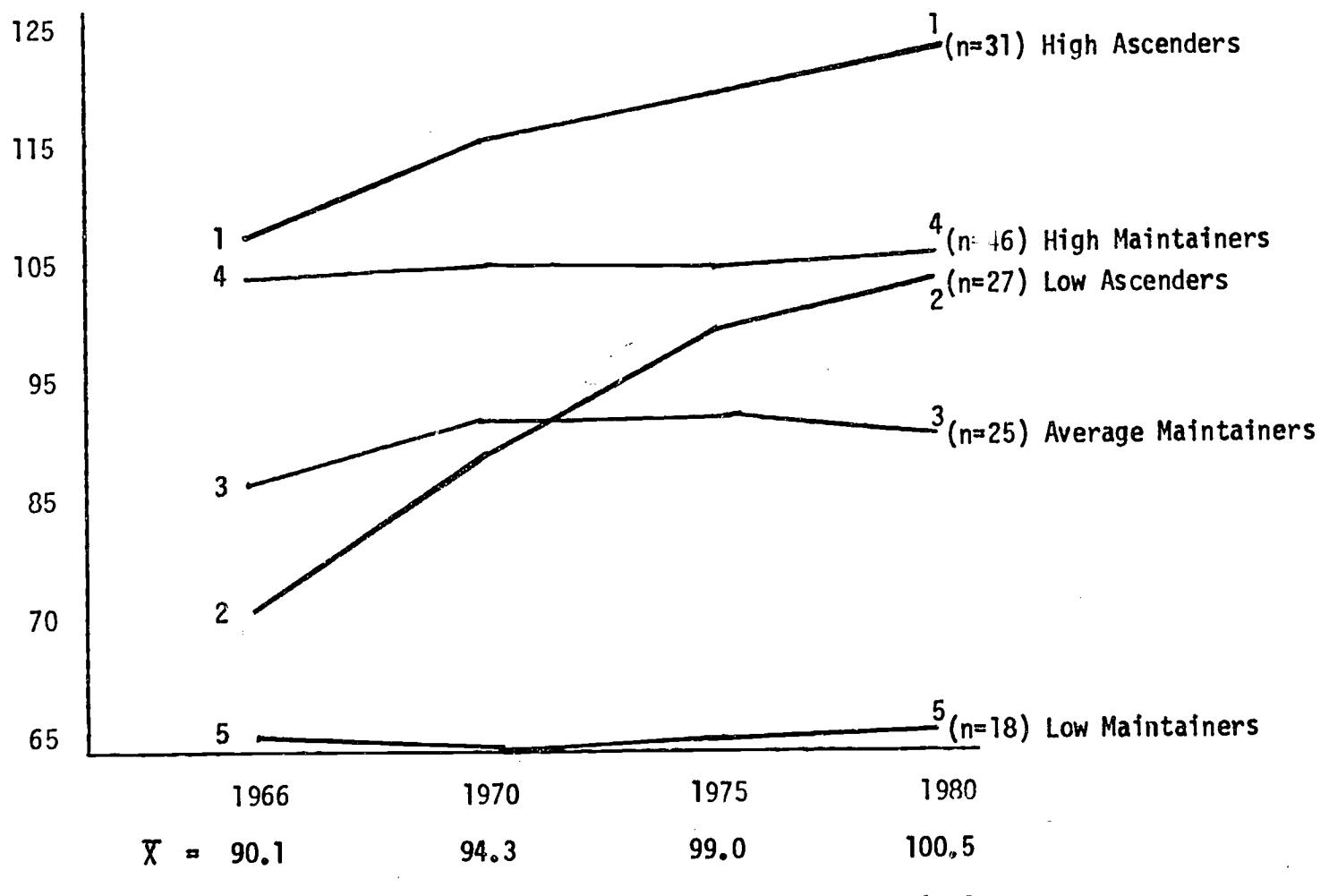
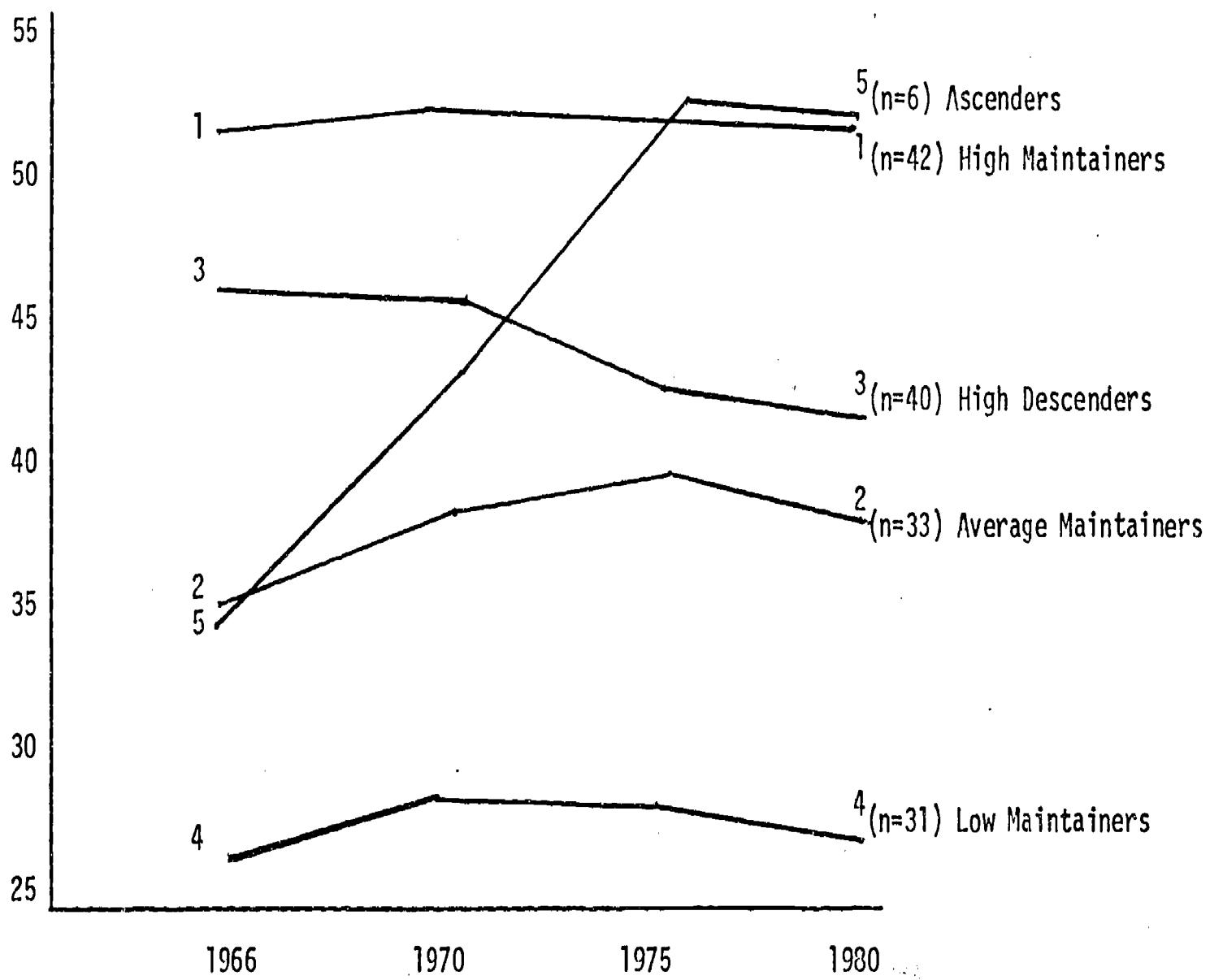
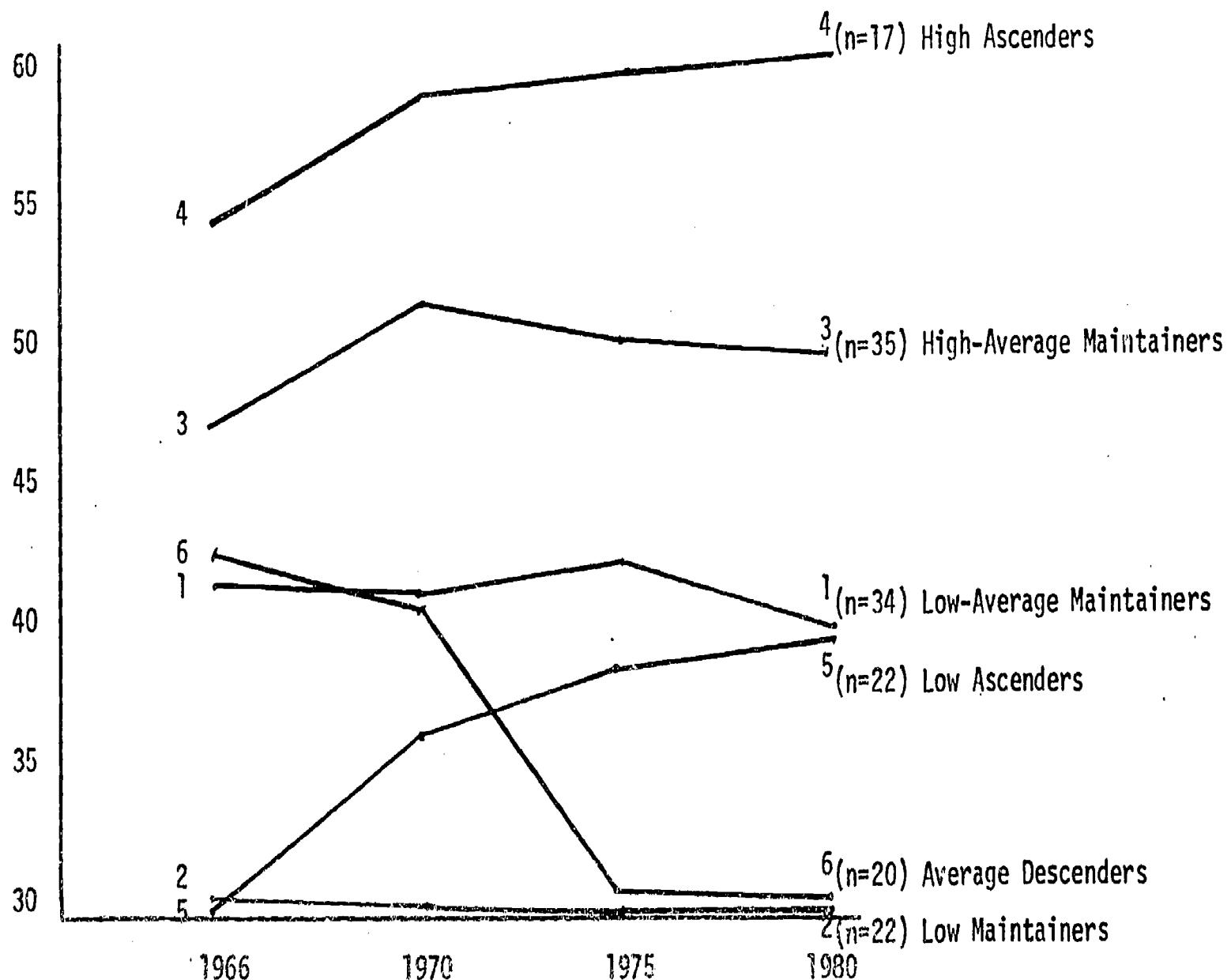


Figure 2  
Aestheticism Developmental Patterns



$$\begin{aligned}
 \bar{X} &= 41.2 & 42.5 & 41.9 & 40.8 \\
 \text{sd} &= 11.1 & 10.5 & 10.1 & 10.0
 \end{aligned}$$

Figure 3  
Intellectualism Developmental Patterns



$$\bar{X} =$$

$$40.0$$

$$42.6$$

$$41.3$$

$$40.5$$

$$sd =$$

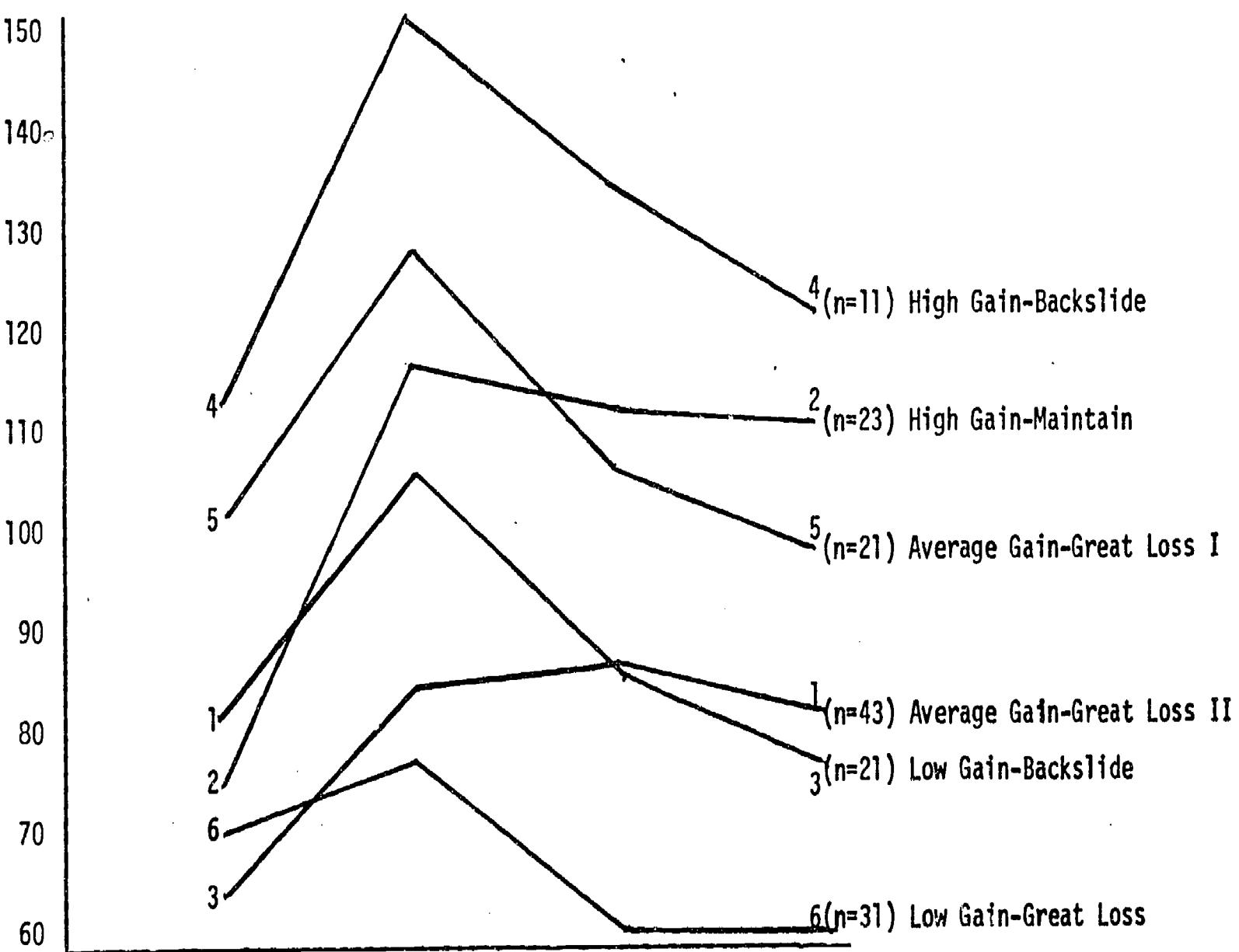
$$11.1$$

$$11.2$$

$$12.1$$

$$12.1$$

Figure 4  
Nonauthoritarianism Developmental Patterns



$$\begin{aligned}
 \bar{X} &= 80.7 & 1966 & 104.3 & 1970 & 90.4 & 1975 & 86.0 & 1980 \\
 S_d &= 19.0 & & 25.9 & & 23.1 & & 22.3 &
 \end{aligned}$$